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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/327,477	06/08/1999	YASUTSUGU KURODA	826.1547/JDH	5479

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STAAS & HALSEY LLP
700 11TH STREET, NW
SUITE 500
WASHINGTON, DC 20001

EXAMINER

NOBAHAR, ABDULHAKIM

ART UNIT	PAPER NUMBER
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2132

DATE MAILED: 09/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/327,477

Applicant(s)

KURODA ET AL.

Examiner

Abdulhakim Nobahar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 June 1999 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-5, 8, 9, 11, 12, 17, 18, 20, 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Kuroda et al. (6,421,779 B1) (hereinafter Kuroda).

3. Referring to claim 1, Kuroda discloses an electronic data storage apparatus having key management means (Fig. 13, and col. 9, lines 26-28) for managing the data storage's unique individual key (col. 9, line 30) and the key shared by all the data storages in the group (a master key similar to common key) (col. 1, lines 23-24.) It also discloses in the Kuroda's system that there exist encryption means that use individual key for encrypting stored data in the electronic data storage and use the shared common key to encrypt the electronic data for the purpose of

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transmission to another storage (Figs. 6, No. 3 and 4, col. 1, line 47, col. 2, lines 31-36, col. 7, lines 51-53, col. 11, lines 5-10, and col. 12, lines 59-62.)

4. Referring to claim 2, Kuroda teaches the use of an individual key (as group key) shared among the data storages (col. 1, lines 23-24, col. 2, lines 21-22, and col. 5, lines 50-51) and a unit for managing the individual key (Figs. 11, 13, and 39.)

5. Referring to claim 3, Kuroda teaches the use of an authorization function (Fig. 21) which can be implemented as a main data storage apparatus. This authorization function generates the individual key (Fig. 16, S37) and distributes it to each data storage apparatus (col. 3, lines 29-30.) The individual key is generated (col. 11, lines 22-25) using an identifier of the electronic data storage apparatus which can be replaced by the individual key of the main electronic data storage apparatus.

6. Referring to claim 4, Kuroda teaches the use of an authorization function (Fig. 21) which can be implemented as a main data storage apparatus in the group of data storages. This authorization function generates the group key (master key) (Fig. 15, S6) and distributes it to each data storage apparatus (col. 3, lines 1-3, col. 4, lines 8-10.) The master key is generated (col. 11, lines 22-25) using an identifier of the electronic data storage apparatus which can be replaced by the individual key of the main electronic data storage apparatus.

7. Referring to claim 5, Kuroda teaches the use of an authorization function as stated above to generate a group key similar to a main electronic data storage. This generation process of group key can use the individual key of the main electronic data storage preliminary assigned to it (col. 3, lines 51-55, and col. 4, lines 32-36.)

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8. Referring to claim 8 and 9, Kuroda teaches the use of an identification information assigned to each electronic data storage (col. 3, lines 51-55.) This unique identification information can be the storage preliminary individual key (col. 4, lines 32-36) that can be used to generate the electronic data storage apparatus individual key. Also, Kuroda discloses the use of an authentication information generation unit of the electronic data storage (Fig. 16, S37 and col. 12, lines 56-65.) to generate authentication information using master or individual key. This process can be performed using the data storage individual key to encrypt the information identification of the group to generate the group key and distributed to the group's electronic data storages.

9. Referring to claims 17 and 18, Kuroda discloses a system of electronic data storage apparatus consisting of units for storing the individual and common keys at the electronic data storage and transmitting data to another data storage (Figs. 11 and 14.) The data storage has apparatuses to communicate to another electronic data storage, transfer data, and using individual key to encrypt data for storing data at the storage, in order to provide the security of data. The data mutually authenticated to meet the recitation of encryption during the transmission step using a common key shared among the electronic data storage apparatuses (col. 1, lines 44-55.)

10. Referring to claims 20 and 21, Kuroda teaches the use of a computer program to be installed on a personal computer to receive and store data in an electronic data storage, to verify data, and transfer data to another data storage (col. 1, lines 9-17, and Figs. 16, 17, and 23.) As mentioned above, unique individual and common keys are used for storing data in the electronic data storage, transferring data to another storage, and verification of data.

Claim Rejections - 35 USC § 103

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11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 5-7, 11-16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al. (6,421,779 B1) (hereinafter Kuroda) in view of Mitra (5,749,736).

13. Referring to claims 5, 6, 7, and 10, Kuroda does not teach the use of a main electronic data storage in each group to generate the group (common) key and to distribute it among the group members and a management apparatus to manage the main data storages and generate group key and a master key to be used by all the data storage apparatuses. Mitra teaches the use of a computer to act as the main member (Trusted Intermediary: TI) in each group (col.12, line 67) to change (generate) the group key and transmit to other members in the group (col. 13, lines 49-53, and col. 12, lines 1-15.) Also, Mitra uses a group security controller (GSC) (col. 4, lines 5-19, col.3, lines 35-42, and col. 12, lines 5-15) that manages all the groups, generates group keys and a key (master key) to be shared among all groups and transmits them to the main members (TI) of each group. It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the scheme of Mitra to the Kuroda's system because it would provide for a group of electronic data storages a main member to change the group's common key when ever it is needed and an apparatus at the top of the system to control and manage the main members of the groups. This would decrease the traffics among the electronic data storage apparatuses and would increase the group independence.

14. Referring to claims 11, and 12, Kuroda teaches the use of an identification information assigned to each electronic data storage (col. 3, lines 51-55.) This unique identification information can be the storage preliminary individual key (col. 4, lines 32-36) that can be used to generate the electronic data storage apparatus individual key. Also, Kuroda discloses the use of an authentication information generation unit of the electronic data storage (Fig. 16, S37 and col. 12, lines 56-65.) to generate authentication information using master or individual key. This process can be performed using the data storage individual key to encrypt the information identification of the group to generate the group key and distributed to the group's electronic data storages.

15. Referring to claims 13-16 and 19, Kuroda does not teach the use of a hierarchical structure to manage the groups of the electronic data storage apparatuses in a higher and lower levels fashion and the group key to be dependent upon a hierarchical level of group. Mittra teaches the use of a hierarchical order for the groups (col. 12, lines 30-60, and Fig. 1) to manage the groups and the group keys. In this system of Mittra as shown in Fig. 1 there is a member (TI) at a higher level group that control and manages the lower level group(s). The communication (transmission of data) from a member at the higher level group to a member at a lower level group is done through the TI of the group at the higher level to the TI of the group at the lower level group and finally to the targeted member at the lower level group and vice versa. The individual, group, and public keys are used (col. 4, lines 33-36) to encrypt and decrypt the data when data is stored in a data storage, transferred to a another storage within group, or transferred to a storage in a different group. Also, the TI at a higher level group changes the group key for

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the TI at a lower level group (col. 4, lines 5-25, and col. 13, lines 48-55). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the hierarchical scheme of Mittra to the Kuroda's system because it would provide a scalable electronic data storage apparatuses system that would make the group more manageable and to transmit data and encryption keys among the groups and the electronic data storages with a higher security and efficiency.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Pat. No. 6,038,322 to Harkins

U.S. Pat. No. 5,555,304 to Hasebe et al.

U.S. Pat. No. 5,796,824 to Hasebe et a.

U.S. Pat. No. 6,076,077 to Saito

U.S. Pat. No. 6,295,361 to Kadansky et al.

U.S. Pat. No. 6,088,454 to Nagashima et al.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdulhakim Nobahar whose telephone number is 703-305-8074. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 703-305-1830. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Abdulhakim Nobahar

September 20, 2002

A. N.

Gilberto Barron

**GILBERTO BARRON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100**